

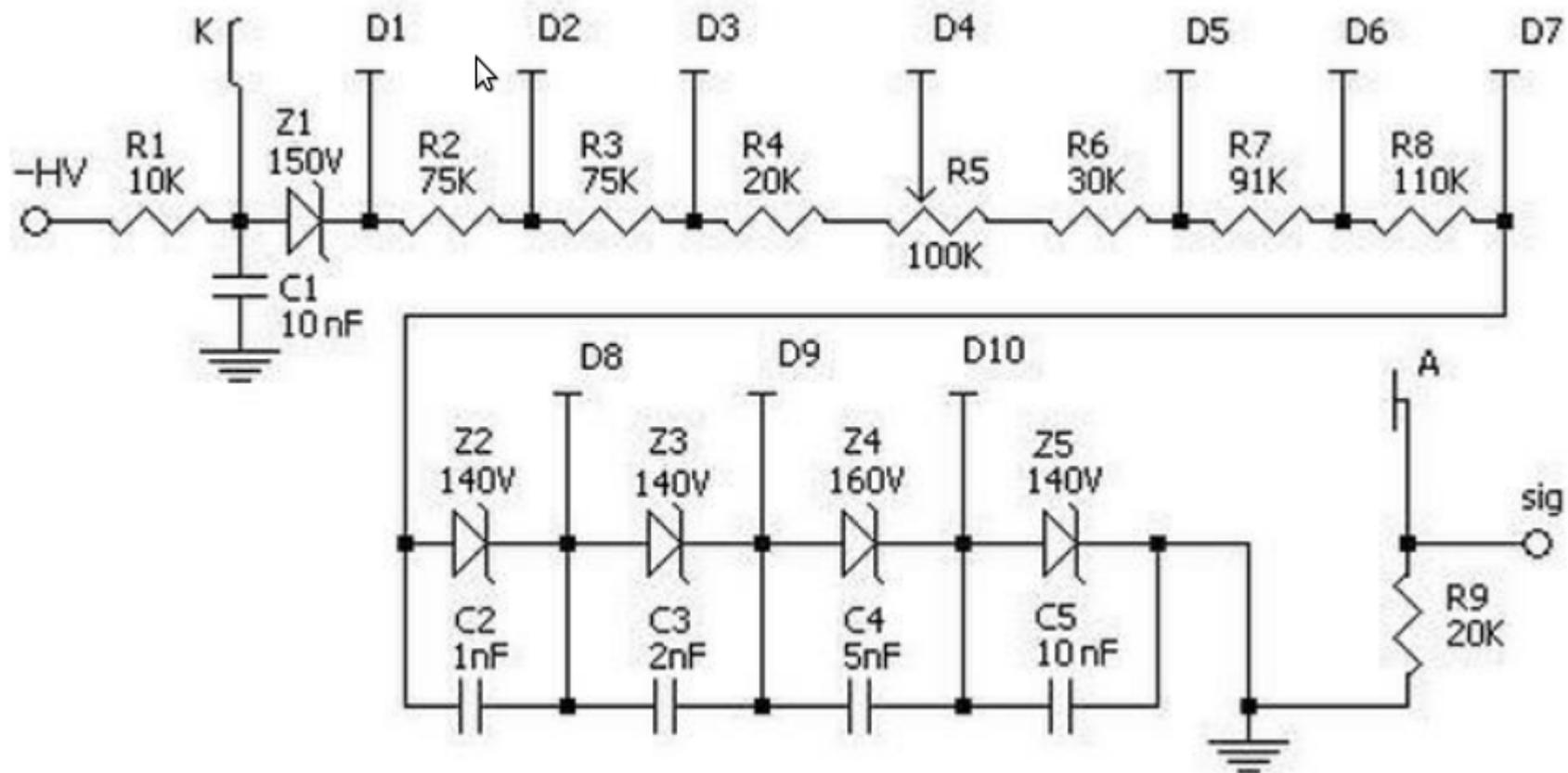
FMS Phototube PCBs

Circuit Board Replacement/Redesign

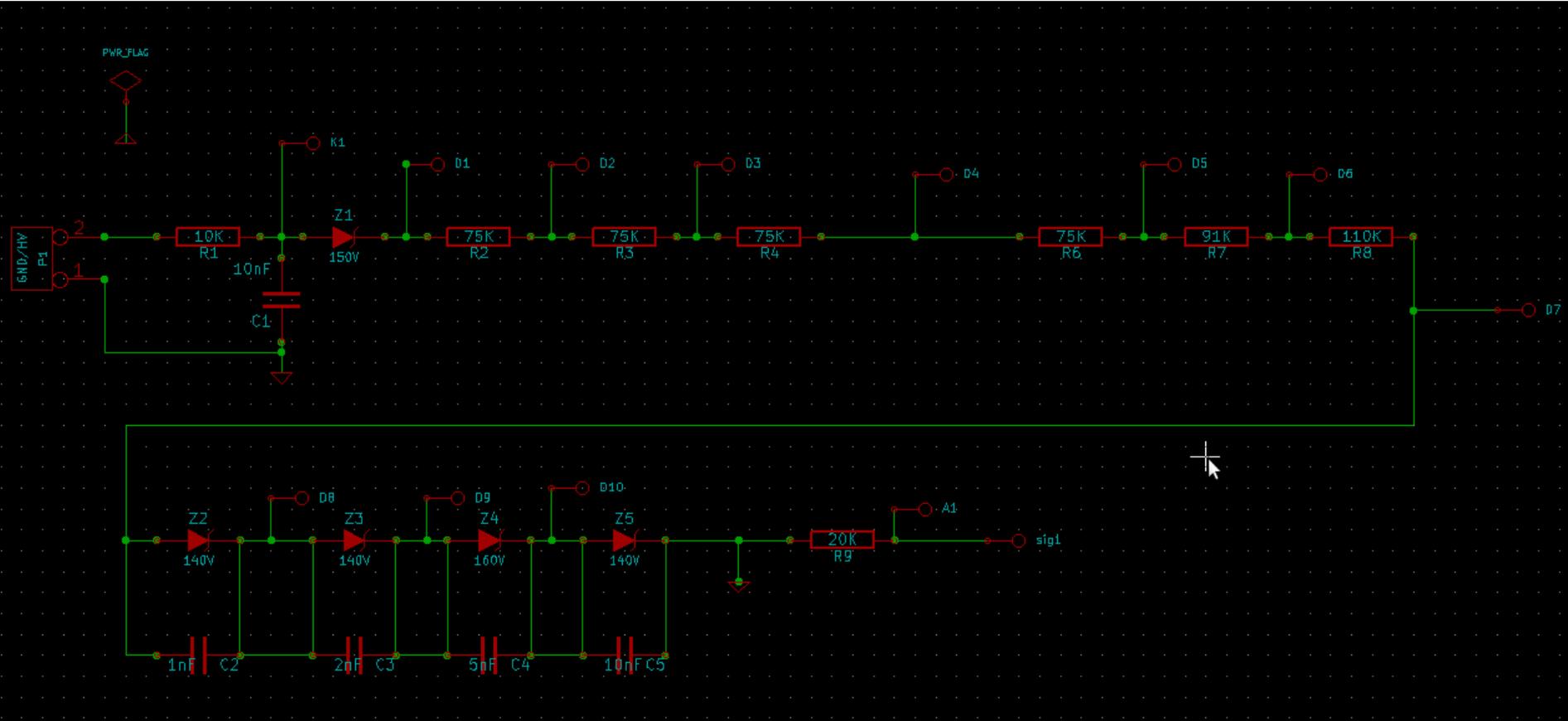
Intro/Schematic

- Built from Dr. Heppelmann's schematic on his PDF 'Repair of Large Cell FMS bases'
- R5 removed as per his suggestion, will need to decide what values R3 and R4 will be assigned
- The HV source wire also has a grounded connection, so I bundled the two together to make things simpler

Schematic from PDF



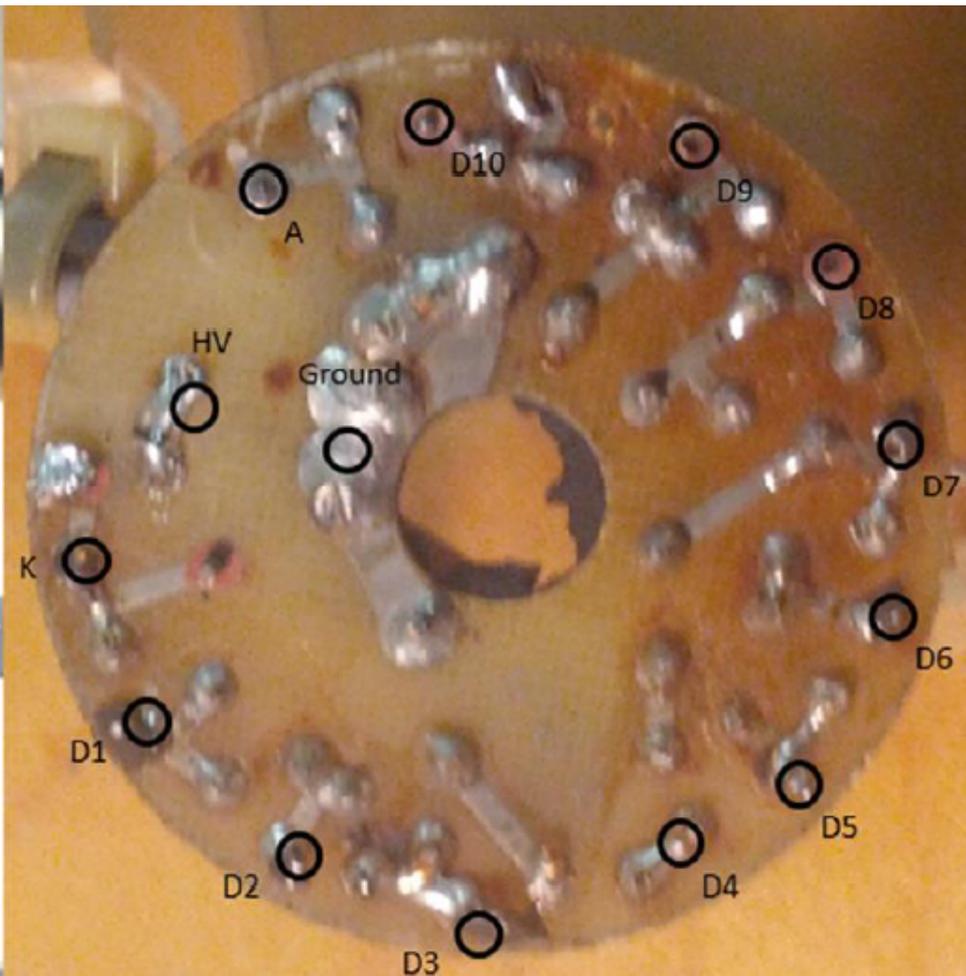
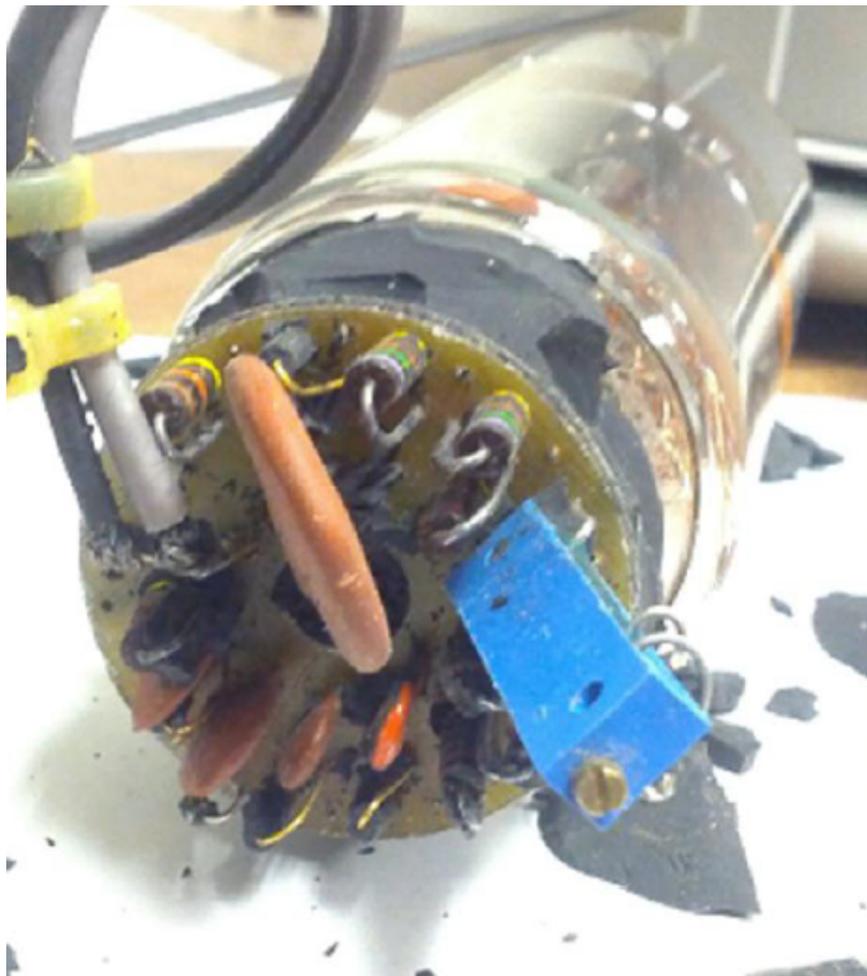
My schematic



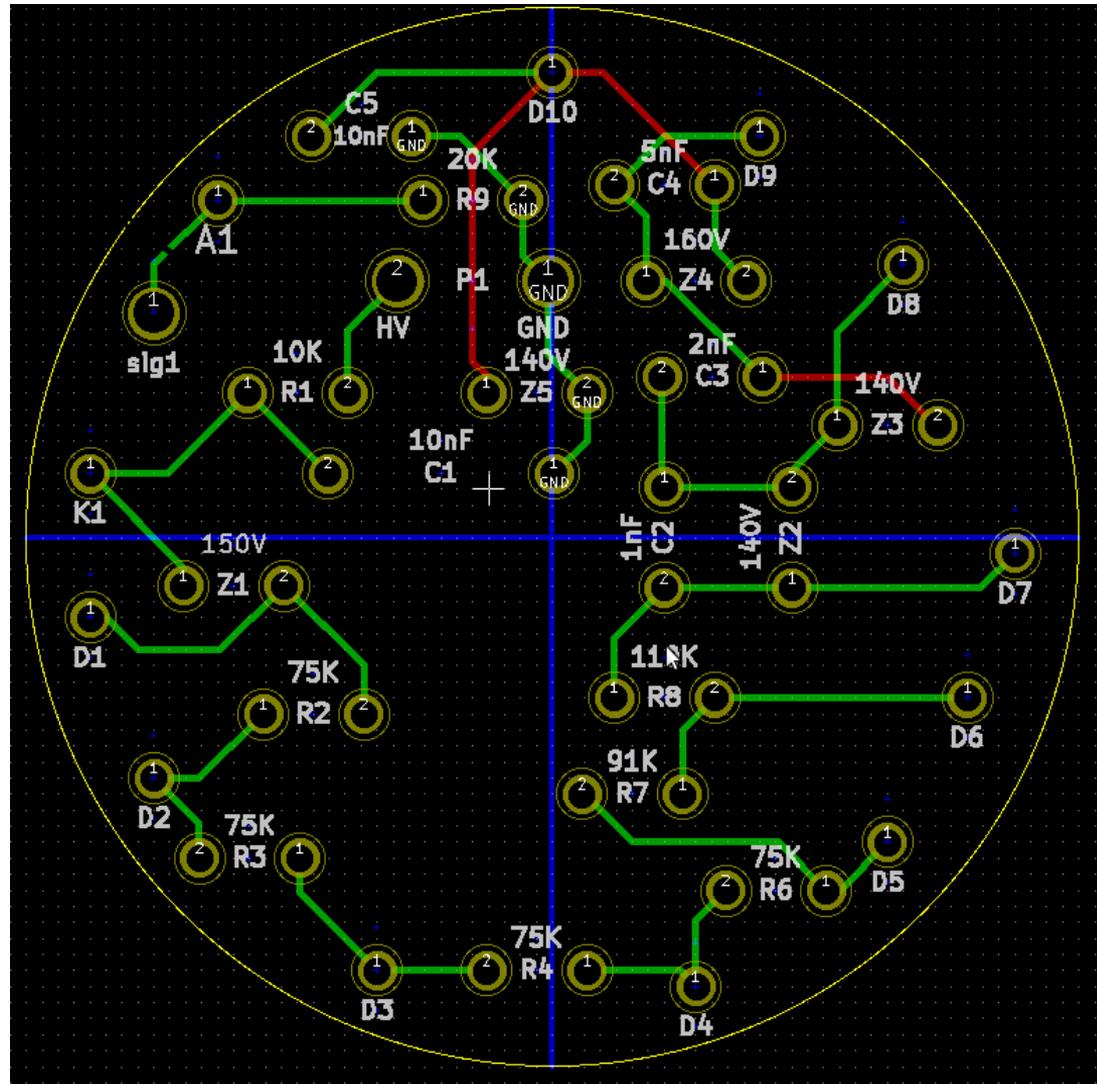
PCB layout

- Tried to mimic what we have, nothing is exactly measured except for the size of the board area (yellow circle)
- Blue cross is a reference for finding the center
- Did not include cut at the center as the consensus at the lab was that it is unnecessary

View of original (both sides)



My PCB layout



Possible Complications

- Might have certain throughholes too close to each other, could cause complications
- Should make sure the standard 4mm span is sufficient for all components
- Might need to keep all connections on one side of the board (like the current boards)

Potential Improvements

- Could make all components surface mounted
 - Convenient, but could be difficult in given space if only one side of the board is available for component placement
- Can move dynode positions to fit whatever socket/arrangement is necessary
 - Currently placed in locations approximate to the current board